

PBDE Deca-Alternatives Advisory Committee Meeting #2 Notes October 25, 2005

The second meeting of the PBDE Deca-Alternatives Advisory Committee was held on October 25, 2005 at the Landmark Convention Center in Tacoma, Washington. A copy of the meeting agenda is included in Attachment 1* - Meeting Agenda – on the Ecology PBDE Web Page: http://www.ecy.wa.gov/programs/eap/pbt/pbde/PBDE_ac-2.htm

The following advisory committee members attended the meeting:

Dave Sanders, Bromine Science and Environmental Forum
Mo McBroom, Washington Environmental Council
Grant Nelson, Association of Washington Businesses
Mel Oleson, Boeing
Ivy Sager-Rosenthal, Toxic-Free Legacy Coalition
Dale Swanson, Panasonic Shikoku
Laurie Valeriano, Washington Toxics Coalition
Craig Lorch, Total Reclaim
Greg Dana, Alliance of Automobile Manufacturers

Ecology and Health staff presenting information during the meeting:

Carol Kraege, Department of Ecology
Denise Laflamme, Department of Health
Alex Stone, Department of Ecology
Cathy Carruthers, Department of Ecology
Dave Bradley, Department of Ecology

Representatives from government agencies who attended the meeting:

Mike Gallagher, Department of Ecology
Greg Sorlie, Department of Ecology
Dennis Bowhay, Department of Ecology
Rob Duff, Department of Health
Ted Sturdevant, Department of Ecology
Lynn Geller, Department of Ecology
Erin Wallace, Department of Health
Leatta Dahlhoff, Department of Ecology

Additional stakeholders and members of the public who attended the meeting:

Susan Landry, Bromine Science and Environmental Forum
Earl Tower, Bromine Science and Environmental Forum

Marc Daudon facilitated the meeting and Nanda Blazej took notes.

Convene and Introductions

Marc Daudon welcomed the advisory committee members and members of the public to the second meeting of the PBDE Deca-alternatives advisory committee. Advisory committee members, representatives of government agencies, and additional attendees introduced

themselves and briefly stated their affiliations. (Marc invited all attendees to sit at the table; although, following previously stated guidelines, he reminded the committee that members would speak first and that other attendees would be recognized as time allowed).

Marc reviewed the meeting agenda, process guidelines and ground rules that are to be used throughout all advisory committee meetings. The agenda was revised since the initially circulated version to include a presentation on the degradation of Deca. He commented that the first PBDE advisory committee meeting gave an overview of recent activities, and that this second meeting was meant to discuss the latest research and identify policy options. He reminded the committee that the Department of Ecology (Ecology) is very interested in receiving feedback from committee members. He explained that the advisory committee meetings are a consultative process and that the committee's role is to provide expertise and perspectives for Ecology and the Department of Health (Health) to make final decisions on the PBDE Chemical Action Plan (CAP).

Overview and Recent Activities

Carol Kraege presented on the purpose of today's meeting and next steps for dealing with Deca (Attachment 2* - Introductory Overview and Attachment 3* - Background Information). She explained that the ultimate goal of this advisory committee process is to come up with recommendations that will reduce exposure of Washington citizens to PBDEs. After today's presentations and discussions, Ecology will come back to the next advisory committee meeting (scheduled for November 16th) with draft recommendations. Carol updated the committee on the European Union's (EU) recent decision to exempt Deca from its PBDE-ban for 5 years. She explained that the dual purposes of today's meeting were to have Ecology present the results of their research and to discuss Ecology's various policy options regarding Deca.

Comments and Clarifications

- **How did Ecology come up with its "ultimate goal?"** One member expressed his concern with Ecology's statement that the "ultimate goal is to reduce the exposure of Washington citizens to PBDEs." The concerned member explained that this statement appears to make an assumption of danger from *all* PBDEs, and that there may not actually be scientific data to confirm that Deca is harmful. Ecology responded that this is a matter of semantics and that they formed this PBDE action committee according to Governor Locke's executive order, which addresses all PBDEs. Ecology will change the wording of their PBDE goals to match Governor Locke's exact language.

Deca Alternatives Assessment

Denise Laflamme presented findings from Health's assessment of alternatives to Deca (Attachment 4* - Deca Alternatives Assessment). She explained that the list of Deca alternatives is still a work in progress and that she welcomes all additional information sources and feedback. She reviewed the main uses of Deca and explained that Health especially focused their research on alternatives to Deca in High-impact polystyrene (HIPS). She reported that the highest use of Deca in the United States is in HIPS, which is found in televisions. She also identified alternatives for HIPS/polyphenylene oxide (PPO). Health had to limit the focus of the assessment so that it could be completed in time. The assessment does not consider other materials or design changes. Denise went through the methods that Health used for identifying alternatives, which included surveys of electronics companies, review of existing reports, and information from chemical manufacturers themselves. She then listed the sources Health used to evaluate the toxicity of alternatives. Health identified 13 alternatives, including halogen-containing alternatives, non-halogen

alternatives and related chemicals. Denise reviewed the toxicity profile parameters that she used to develop the alternatives matrix, and explained that, for a couple of alternatives where Health lacked toxicity information, they contracted with a third-party company to model toxicity values.

Health's toxicity matrix is based on the summary table that the US Environmental Protection Agency (EPA) developed for alternatives to Penta in low-density furniture foam in 2005. The Deca matrix provides a summary of use, persistence, bioaccumulation potential and toxicity information for Deca and Deca alternatives. Denise summarized Health's findings to-date and gave their preliminary conclusion that they have not yet identified clear alternatives to Deca.

She explained that Health's next steps are to continue gathering information on alternatives and toxicity and to update the toxicity matrix. Denise would like everyone to send her additional information or resources that she can use in her assessment. Please direct questions or information to denise.laflamme@doh.wa.gov.

Advisory committee members had the following questions and comments on the Deca alternatives analysis:

- **Can Ecology and Health reveal the identities of the companies they surveyed in order to understand the market share that is represented in the survey results?** Ecology responded that they cannot share the names of the businesses they surveyed, but they did affirm that at least one of the businesses was from Southeast Asia.
- **How did Health come up with the "Low, Medium, High" ratings on the toxicity matrix?** Denise pointed to the technical notes following the table where Health explains the parameters they used for ranking human health effects and ecotoxicity. Health welcomes feedback on the parameters.
- **How were the alternatives identified?** One member asked if the alternatives were from manufacturers or simply from what looks good chemically. He expressed concern that some of the alternatives mentioned are not necessarily feasible from a manufacturing perspective. Health explained that they were looking for alternatives that were marketed by chemical companies for use in HIPS or HIPS/PPO. Health relied greatly on information from chemical companies. They wanted more information from manufacturers about what chemicals they were using, but that information was not readily available.
- **How do the alternatives compare when it comes to costs?** One member mentioned that cost is a huge issue to manufacturers when it comes to using alternative chemicals in their products. He explained that manufacturers generally will not do anything that will add to the price of their products.
- **Two alternatives listed are not realistic Deca-alternatives.** One member commented that Zinc borate and antimony trioxide are not alternatives for Deca; they are used in conjunction with other flame retardants and can significantly reduce the amount of flame retardants used, but they are not alternatives.
- **Which alternatives are actually being used?** One member commented that she spoke with chemical companies about Deca alternatives and they indicated that the market is moving towards phosphorous-based flame retardants. She asked Health if they know which alternatives are actually being used. Health and other committee members responded that Resorcinol bis diphenylphosphate (RDP), Bisphenol A diphosphate (BAPP), Bisphenol A bisdiphenylphosphate (BDP), and Triphenyl phosphate (TPP) are actually used.

- **Disagreement about whether manufacturers will continue using alternatives now that the EU has exempted Deca from its ban.** One member mentioned that some Southeast Asian manufacturing facilities are reverting back to Deca because Deca costs less than alternatives. He said that because Deca is the lowest-cost material available, businesses are not financially motivated to use alternatives. Another member disagreed and pointed to an article that she handed out titled, *"Businesses Stay the Course to Use Alternative Flame Retardants despite Europe's Decision to Delay the Deca Ban in Electronics"* (**Attachment 5* - Handout Provided by WTC**). Another member mentioned that it seems a little too early to determine if manufacturers are going to stay with alternatives or not because the EU's decision was made so recently. He stated that the real questions should be about the information that is available on the toxicity of alternatives, and that it takes time to generate this information.
- **Suggestions for improving the toxicity matrix.** One member suggested that Health should put some of the table's information in italics to indicate information based on models versus from other data sources. His recommendation is based on the EPA's Penta assessment table. Health responded that they will try to indicate somewhere whether the information was based on modeling or not.
- **What are the confidence factors for the toxicity matrix?** Health responded that determining confidence factors may be too precise an approach for this type of assessment. Health does not anticipate putting that level of precision in this table. One member is concerned that public officials and others who look at this table may jump to conclusions. Health responded that they will put an uncertainties discussion in the text that accompanies the matrix.
- **How can we get more data on the safety or effectiveness of alternatives?** One member suggested that state agencies should shift responsibility to the manufacturers to come up with much-needed data on the safety and effectiveness of Deca alternatives.

Deca-Degradation Update

Alex Stone, Chemist for Ecology, presented on the most recent scientific findings related to the degradation of Deca (**Attachment 6* - Degradation of Deca**). He explained that new information is available on a daily basis and that this presentation builds on the degradation information packet that he sent to the committee a few weeks earlier. Alex began by stating researchers are challenged by trying to differentiate between Penta and Octa that occurs in the environment from Deca degradation versus Penta and Octa that is found in the environment through other means.

Alex then reviewed recent studies, including one where researchers gathered information on the distribution of Deca and other PBDEs in the vicinity of a US plastics facility. Other studies addressed Deca in anaerobic conditions and through artificial and natural UV degradation. Alex mentioned that the problem with laboratory studies is that you cannot model all variabilities that occur in the environment.

In conclusion, Alex stated that Deca does undergo degradation and that debromination of Deca occurs through light exposure. He also explained that he did not mention some studies in his findings because he had technical concerns about the data. He did however, include results from these unmentioned studies in the larger packet of information that he sent to the committee prior to the meeting.

Advisory committee members had the following comments and questions on the Deca-degradation update:

- **Is it possible to determine how a product will degrade based on how it's manufactured?** Ecology responded that they are not familiar with studies that have looked at this link.
- **How are Deca and Octa manufactured?** One committee member stated that Deca is not manufactured by simply "cooking" Octa longer, but is manufactured via a separate process.
- **Disagreement with Deca degradation data.** One committee member stated that Ecology does not enough data to know if Deca degradation is worse or better for human and environmental health than Octa and Penta. He disagrees with the statement in the concluding slides of Ecology's presentation that "degradation products have been shown to have a negative impact upon human health and the environment." Another committee member agreed with the recent EU's risk assessment report that stated they cannot conclude that Deca actually degrades in the environment. Another committee member mentioned that there was disagreement within the EU regarding the Deca research.
- **Is there evidence of anaerobic degradation?** Ecology responded that yes, there is evidence of anaerobic degradation in the sewage sludge studies.
- **Relativity of dose and toxicity.** One committee member commented that considering how long Deca has been used, the levels in biota mentioned in Ecology's findings appear to be very low. Ecology responded that the concept of "low" is relative to the level of toxicity. The committee dialogued about the issues of dose and toxicity. A Health representative explained that, while the toxicity levels may be low, humans are exposed to high doses of Deca because of the prevalence of Deca-containing products in households. He added that dose determines the toxicity.

Cost-Benefit Analysis

Cathy Carruthers and Dave Bradley presented the results of their cost-benefit analysis of a potential Deca ban (**Attachment 7* - Cost Benefit Analysis**). Cathy gave an overview of the cost-benefit analysis process and provided the formula for determining total costs to businesses of having to replace Deca. She explained that the initial step of the cost-benefit analysis was to gather information from Washington wholesalers and retailers that would be affected by a ban on Deca in order to understand the share of sales that would have to be replaced with Deca alternatives. Ecology sent 307 surveys to wholesalers and retailers. More than half (176) of the surveyed companies said that they would not be affected at all by a ban on Deca. Ecology could not reach 103 companies. Of the remaining 28 companies, only 7 returned the survey.

Cathy and Dave then went on to review Ecology's shift to a benefit-driven analysis, looking at what price increase would be required for products containing Deca to off-set the health gains if Deca was banned. They also reviewed the three steps for looking at benefits: estimated health outcomes, dose response relationships (how much effect for how much exposure), and exposure assessment. Dave explained that the cost of illness estimates they used in the analysis were based on four calculations: lost earnings based on loss of IQ points in a lifetime, loss of statistical life, annual cancer treatment costs, and annual thyroid treatment costs. The lost earnings estimates used in Ecology's analysis were based on the Centers for Disease Control and Prevention's (CDC) calculations of \$14,500 per lost IQ point. Cathy explained that the value of statistical life is based on many factors and varies by agency; Ecology used a conservative estimation of \$4 million in their analysis. Cathy went through the price shift break even points for televisions and computers in terms of

costs and rotation times. She then explained Ecology's conclusion that, for both businesses and individuals, there are potentially high costs and high benefits to banning Deca and switching to alternatives.

Advisory committee members had the following comments and questions on the cost-benefit analysis:

- **Why did Ecology include computers as one of their quantified cost endpoints?** One committee member asked why computers were included along with televisions in Ecology's analysis because computers do not normally have HIPS in them. Ecology answered that they had different data that did show HIPS use in computers. Ecology will look back at where this piece of information came from. Ecology also explained that if they take out computers, their analysis will shift drastically.
- **Questions regarding the "Incremental Exposure" slide.** One committee member commented that he thought the incremental exposure slide could be misleading to readers because it illustrates a concept but does not necessarily represent real data. He would like to see this chart taken out of public materials. Another committee member asked why the relative exposure line flattened out after a few years even in the case that Deca is not banned. Ecology responded that they assume a certain leveling-off of exposure after a certain amount of time.
- **Did Ecology look at special education costs under the valuation of benefits?** One committee member asked if Ecology looked at special education costs or just the loss of earnings under the valuation of benefits. Ecology responded that they only looked at the loss of earnings.
- **Can Ecology explain what they mean by the "price break even range?"** Ecology responded that this concept addresses the increase in price of electronics that individuals would have to pay in order to minimize health risks from those products.
- **Shouldn't Ecology have included health effects from Deca alternatives in its cost-benefit analysis?** Ecology responded that this particular cost-benefit analysis assumes a benign alternative. The reason for this is that Health was doing its research on Deca alternatives at the same time as this cost-benefit process so there was not time to plug their findings into the analysis. Ecology could do another cost-benefit analysis for Deca alternatives in the future.
- **In the health effects portions of the analysis, is it assumed that Deca degrades into Penta?** Ecology responded yes.
- **How relevant is it to use thyroid data when discussing Deca?** One committee member asked if Ecology also looked at other factors that would lead to thyroid effects in the human health impacts portion of the analysis. Ecology responded that it did not quantify how other risk factors would influence human health. The committee discussed how challenging it is to really identify all of the factors that influence human health.
- **Are there more important issues for Ecology to be addressing?** One committee member asked everyone to put the whole issue of Deca in context and asked if there are more important issues Ecology should be addressing instead. Ecology and Health responded that, if you look at the exposure side of the equation, even if the toxicity is not necessarily high, then Deca is still a problem because of its widespread existence in products. Another member asked if Ecology should be spending so much time and energy on the cost-benefit analysis portion specifically because it is based on so many assumptions. She suggested that Ecology instead learn more from the large percentage of manufacturers that are moving away from using Deca.

- **Do we need flame retardants in all of the products where they currently exist?** One committee member expressed his opinion that perhaps the manufacturing industry could reduce the amount of flame retardants that are being put into products in the first place.
- **When should Ecology take action?** One committee member expressed his concern that Ecology needs to make its decisions to act on Deca based on scientific data. He continued to say that he is not sure how much data Ecology needs, but that he is confident that they do not have enough data at this point. Another member responded that if Ecology waits for more evidence, humans are potentially being harmed. He agreed that Ecology does not have enough conclusive answers at this point, but that not acting immediately and then finding out that harm is coming to humans is not good.
- **Clarify the "high costs/high benefits" conclusion.** Ecology responded by clarifying that the "high costs" statement represents a range from \$73 million to \$5 billion, with a median of \$2.7 billion and a mean of \$4.9 billion. There was no discussion of "high benefits."

Cathy welcomed any feedback and offered that she would be happy to show anyone how to use the cost-benefit analysis software if they wanted to play around with the data.

Overview of Policy Options

Carol Kraege began this section of the meeting with a presentation on Ecology's key findings. Following the key findings, Carol reviewed Ecology's seven CAP policy options (**Attachment 8* - Key Findings and Policy Options**):

- **Product Ban Options:**
 - Ban all forms of PBDEs in electronics;
 - Ban Penta and Octa in products;
 - Ban Deca in products not using Deca currently;
 - Ban Deca in electronics as soon as a safer alternative is found.
- **Product Labeling Options:**
 - Label all products containing PBDEs;
 - Label electronics containing PBDEs;
 - Label products containing Deca;
 - Label products that do not contain PBDEs.
- **Incentive Options:**
 - Decrease taxes on products that do not contain PBDEs;
 - Increase taxes on products that do contain PBDEs;
 - Create tax incentives to encourage redesign of PBDE-containing products;
 - Create other incentives to encourage voluntary shift to non-PBDE products.
- **Further Analysis Options:**
 - Monitoring, including house dust, biomonitoring, leachability, baseline environmental condition, and/or exposure pathways.
- **Chemical Policy Options:**
 - Influence national policy/TSCA revisions;
 - Explore state-only options.
- **Education Options:**
 - Dust control via existing Health initiatives;
 - Create website to identify products that are PBDE-free for consumers;
 - Create website to identify products that are PBDE-free for retailers.
- **No Action Options:**
 - No ban;
 - No further study;

- Complete the CAP and end-of-life work;
- Monitor literature and developments in other jurisdictions.

Carol asked the committee to provide feedback on the policy options. In light of the EU's decision to exempt Deca from its ban, she suggested that it is important to understand that the US already has a higher exposure rate to Deca than Europe. Carol explained that, from Ecology's perspective, there is enough information to require some sort of action. She framed the discussion on the CAP's policy options in terms of the following questions:

What other options and ideas do you have about how to proceed?

What are your preferred options?

What are your least favorite options?

What combinations/packages would you suggest?

Committee members had the following suggestions for Ecology regarding the various policy options:

Product Ban

- **Ban Penta and Octa; not Deca.** One committee member mentioned that since Penta and Octa have been banned in other states, Washington State should at least go ahead with these bans, although there is not enough information at this time to include Deca in the ban. All committee members supported a ban on Penta and Octa.
- **Add waiver exemption provision.** One committee member suggested that if Ecology bans Penta, Octa and/or Deca there should be a waiver for special products and service products.
- **Ban Deca.** A few committee members commented that Ecology has enough information to go ahead with a ban on Deca. One member stated that Washington State has a chance to be a world leader by banning Deca. Some committee members supported a ban on Deca, but some did not support this ban.
- **Ban Deca and provide temporary exemptions for certain industries.** One committee member recommended that, if Ecology does go ahead with a ban on Deca, they should provide certain industries where Deca alternatives are not currently available, such as transportation and aeronautics, temporary relief from a ban. Another member suggested that Ecology shift responsibility to the manufacturers to provide scientific data on the safety and effectiveness of Deca alternatives.
- **Do not ban Deca.** One committee member commented that Ecology does not have enough data to go forward with a ban on Deca. He stated that Ecology does not seem to have enough data on Deca alternatives either so that it does not make sense to force manufacturers to use alternatives. Several members did not support a ban on Deca.
- **How would banning Deca affect the recycling industry?** One committee member commented that, if Deca is banned, Ecology would need to tell recyclers and waste managers how to properly manage wastes containing Deca. He explained that recyclers are currently trying to figure out how to deal with materials they already collect that contain Penta, Octa and/or Deca.

Product Labeling

- **Only support labeling if labels list all chemicals in a product.** One committee member supports labeling only if the labels list all chemicals that are found in a product.
- **Labeling may not be useful to consumers.** One committee member expressed concern that labeling by itself may not be useful to consumers.

- **Labeling ok, but not the main priority.** One committee member commented that if PBDEs are not banned then she supports labeling, but that labeling should not be Ecology's first priority.
- **Labeling will push consumers to do further research and change their behaviors.**

Incentives

- **Look at problem in terms of market-based incentives.** One committee member suggested that the market can drive changes.
- **Incentives alone are not the solution.** One committee member mentioned that she is not opposed to incentives, but that alone they are not the solution.
- **Incentives could be useful as we move towards the ultimate ban.** One committee member suggested that a ban on Deca is feasible and that incentives can be useful in movement towards a ban.
- **Link a PBDE-fee to electronics recycling bill.** One committee member mentioned that there is a possibility that there will be new legislation on recycling of electronic waste in Washington State soon. The proposed bill will encourage companies to pay for recycling of products. The member asked if Ecology could somehow link a fee to this recycling bill that would charge companies varying amounts according to the amount of PBDEs in their products.
- **Make sure incentives are used to encourage the right behavior.** One committee member commented that incentives sound like a good idea, but he was not sure if Ecology would be incentivizing the right behavior since they do not currently have enough information on effective alternatives to Deca or all PBDEs. Another committee member mentioned that she thinks it makes more sense to tie tax incentives to the whole PBT program so that Ecology does not incentivize the use of one PBT over another.

Further Analysis

- **Continue review of Deca and create a website.** One committee member recommended that Ecology continue reviewing data on Deca and make decisions based on science. He also suggested that Ecology create a website that explains the chemicals they are reviewing and offers information on alternative products.
- **Continue to track what the EU is doing; keep finger on pulse.**
- **Monitoring as a minimum.** A Health representative mentioned his frustration with the lack of toxicity data for Deca alternatives. He recommended monitoring Deca as the very least Ecology could do, and he also suggested the need to think about promoting TSCA reform.
- **Support monitoring if it is done properly.** One committee member supports monitoring as long as the monitoring is done properly and doesn't automatically result in a ban.
- **Support monitoring if it is focused on where there is a lack of information and not used to delay action.** One committee member mentioned that Ecology already has a lot of results from monitoring, so it may only be worth Ecology's resources if they focus their monitoring efforts on places where there is a lack of information. She continued to say that she does not think monitoring should be an excuse to delay any other actions such as a ban.

Education

- **Increase awareness.** A few committee members recommended that Ecology should focus on educating consumers, manufacturers and retailers about PBDEs. They suggested that people need to understand what PBDEs are, where they come from, why they are harmful, etc.

- **Educate residents to change behaviors as consumers.**
- **List alternatives for consumers but do not ban.** One committee member recommended thought Ecology create a website that would list alternative, non-PBDE-containing products for consumers, but he did not support a ban.
- **Continue with current education program.** One committee member commented that Ecology should at least continue with their current level of education which consists of websites and literatures. He continued to say that larger educational campaigns will take a lot more resources.

No Action

- **No action.** For the record, one committee member supported no further action regarding Deca.

Advisory committee members had the following comments and questions on the overview of policy options:

- **Clarification on the use of Deca as an alternative to Penta and Octa.** One committee member clarified that Deca will not replace Penta and Octa if Penta and Octa are banned from use in specific products because Deca does not have the same properties.
- **Disagreement with two of Ecology's key findings.** One committee member mentioned his disagreement with two of Ecology's key findings: "Deca breaks down and is a problem," and "TSCA is a failure-the system isn't protective." He asked whether Ecology had the data to support these findings and questioned the role of a state agency questioning the federal government. Ecology replied that it will remove the word "failure" from its findings, but that it does see that citizens and state agencies have the responsibility to criticize the federal government when appropriate.
- **How will the Deca issue affect retailers?** One committee member commented that the Deca issue really boils down to the retailers and what they decide to sell regardless of what is being manufactured. Ecology responded that perhaps they could create a website with lists of manufacturers that are not using Deca for retailers to refer to when deciding which products to carry.
- **Did Ecology hear feedback from companies that labeling is more difficult than banning or vice versa?** Ecology responded that in their conversations with manufacturers the suggestion came up to replace a ban with labeling requirements.
- **Are there any products in the world still being made with Penta and Octa?** A committee member responded that manufacturers are only using Penta and Octa reserves that existed before they were banned (December 31, 2004).
- **Focus should be on end-of-life management.** One committee member mentioned that manufacturers have probably moved towards alternatives to Deca because of the negative publicity, not necessarily because they have concluded that Deca-containing products are associated with human or environmental health concerns. He suggested that Ecology focus on the end-of-life management of these products because the greatest risk appears to be at the end-of-life when the products are being recycled or disposed. Ecology responded that they will be holding separate end-of-life meetings beginning in early December. The end-of-life committee will meet every six weeks until June 2006 and will include different stakeholders than the Deca alternatives committee.
- **Are there reasons not to ban Penta and Octa?** One committee member asked if there are reasons not to go forward with a ban on Penta and Octa. Another committee member responded that recycling of carpet padding, which is made with Penta, is a concern.

- **Question over whether non-EU member nations have to abide by EU's latest rule to exempt Deca from its ban.** Ecology responded that they will look into the EU's rule and how it affects members and non-members.
- **Can Ecology fund an academic institution to conduct studies on Deca alternatives?** A few committee members responded that it might be a good idea for Ecology to give grants to an academic institution to conduct research, but they questioned whether a one-time grant is the most effective or efficient use of resources. A committee member suggested linking research with regulatory requirements such as P2 planning.
- **What does it mean to ban Deca from products that do not currently use Deca?** Ecology responded that this would mean preventing Deca from being used in the future.

Additional handouts (Attachment 9* - PBDE Related Legislation in Other States and Attachment 10* - Developments Within the EU Regarding Deca) were also distributed to everyone present at the meeting.

Wrap Up & Next Steps

Carol Kraege thanked everyone for their input and expressed how helpful today's discussion was in Ecology's decision-making process. She explained that Ecology will come up with recommendations based on today's discussion and will bring those recommendations to the committee's next meeting, (which is scheduled to take place on November 16th). After the November 16th meeting, Ecology will compile their draft plan and put it out for public comment shortly after. The public comment period must last a minimum of 30 days. Ecology needs to follow this timeline in order to finalize the plan by end of the year.

Carol asked for committee members to bring additional information or data to the November 16th meeting so that there is time to consider including this information in Ecology's draft plan.

*Attachments can be found on Ecology's website or obtained by email from Mike Gallagher (mgal461@ecy.wa.gov).

Meeting Adjourned